CLAIM AMENDMENTS:

Claims 1 – 13 (canceled).

14. (new) Biocompatible and biodegradable implant for filling a cavity in a living organism comprising polymer-coated biocompatible and biodegradable granules fused together through polymer linkage, said granules being made of biocompatible and biodegradable materials selected from the group consisting of biopolymers, bioglasses, bioceramics or a mixture thereof, and said granules having an equivalent-diameter in a range from about 350 μm to about 2000 μm; a major portion of said granules being coated with at least one biocompatible and biodegradable layer of a polymer selected from the group consisting of poly(α-hydroxyesters), poly(ortho esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarate), poly(ester amides), poly(ethylene fumarate), polylactide, polyglycolide, polycaprolactone, poly(glycolide-co-trimethylene carbonate), polydioxanone, co-polymers thereof or a blend of those polymers and said polymer layer having a thickness in a range of 2 μm to 300 μm corresponding to a weight fraction of about 4% to about 15% of the weight of the said implant.

15. (new) Biocompatible and biodegradable implant as in claim 14, wherein the bioceramic is calcium sulfate or calcium phosphate.

16. (new) Biocompatible and biodegradable implant as in claim 15, wherein the calcium phosphate is selected from the group consisting of monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dehydrate, dicalcium phosphate anhydrous, tetracalcium phosphate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, apatite, hydroxyapatite or a mixture thereof.

17. (new) Biocompatible and biodegradable implant as in claim 14, wherein the equivalent-diameter of said granules is in the range of about 500 μm to about 1000 μm.

18. (new) Biocompatible and biodegradable implant as in claim 14, wherein said granules are of a regular shape.

19. (new) Biocompatible and biodegradable implant as in claim 18, wherein said regular shape is a spherical shape.

20. (new) Biocompatible and biodegradable implant as in claim 14, wherein the thickness of the polymer layer is in the range of about 5 μm to about 20 μm.

21. (new) Biocompatible and biodegradable implant as in claim 14, wherein the polymer-linkage is carried out such that after fusing the granules together, an open interconnected porosity with macropores having an average diameter in a range of about 100 μm to about 500 μm, is achieved.

22. (new) Biocompatible and biodegradable implant as in claim 21, wherein the average diameter of the macropores is in the range of about 200 μm to about 300 μm.

23. (new) Biocompatible and biodegradable implant as in claim 14, wherein the biocompatible and biodegradable granules are selected from solid granules, porous granules, hollow granules, hollow granules with at least one opening in the granule wall enclosing the interior hollow space, and mixtures thereof.

24. (new) Biocompatible and biodegradable implant as in claim 23, wherein porous biocompatible and biodegradable granules are used.

25. (new) Biocompatible and biodegradable implant as in claim 24, wherein the porous biocompatible and biodegradable granules include micropores having an average diameter in a range of more than 0 to about 10 μm.

26. (new) Biocompatible and biodegradable implant as in claim 25, wherein the opening in the granule wall of the hollow granules is larger than the average diameter of the micropores in the porous granules.

27. (new) Biocompatible and biodegradable implant as in claim 26, wherein the average diameter of the micropores is in the range of about 0.1 m to about 6 m.

28. (new) Biocompatible and biodegradable implant as in claim 25, wherein the porous granules include macropores having an average diameter in a range of more than about 10 μm to about 500 μm.

29. (new) Biocompatible and biodegradable implant as in claim 26, wherein the average diameter of the macropores is in the range of about 100 μm to about 300 μm.

30. (new) Biocompatible and biodegradable implant as in claim 14, further comprising at least one biological active substance that is integrated into the granules and/or into the biocompatible and biodegradable coating, and/or forming a coating layer itself.

31. (new) Biocompatible and biodegradable implant as in claim 14, wherein mixtures of non-coated and polymer-coated granules are fused together.

32. (new) Biocompatible and biodegradable implant as in claim 14, wherein said biodegradable and biocompatible implant is made of two or more kinds of granules, said different kinds of granules being made of different biocompatible materials and/or comprising polymer-coatings that are distinct from each other and/or having different equivalent diameters.

33. (new) Biocompatible and biodegradable implant as in claim 32, wherein the two or more kinds of granules are solid granules, porous granules, hollow granules, and/or hollow granules with at least one opening in the granule wall, and mixtures thereof, and said implant being shaped in the required manner to accommodate the granules.

34. (new) Biocompatible and biodegradable implant as in claim 14, wherein the granules are mixed with microspheres made of a biodegradable and biocompatible material and loaded with at least one biologically active substance.

35. (new) Biocompatible and biodegradable implants as in claim 14, wherein said biocompatible and biodegradable granules are spray-coated with a biocompatible and biodegradable polymer to form a polymer coating having a homogenous thickness in a range of about 2 μm to 300 μm, corresponding to a weight fraction of about 4% to about 15% of the weight of the said implant.

36. (new) Biocompatible and biodegradable implants as in claim 35, wherein said biocompatible and biodegradable granules are spray-coated in a fluidized bed machine.

37. (new) Biocompatible and biodegradable implants as in claim 35, wherein the homogenous thickness of the polymer coating is in the range of about 5 μm to about 20 μm.

38. (new) Biocompatible and biodegradable implant as in claim 14, wherein said granules are fused together in a mold in a pressurized CO_2 atmosphere under a pressure in a range of about 20 bar to about 200 bar, for at least about 3 seconds.

39. (new) Biocompatible and biodegradable implant as in claim 38, wherein the pressure is about 50 bar.

40. (new) Biocompatible and biodegradable implant as in claim 38, wherein the granules are under pressure for a range of about 3 seconds to about 180 seconds.

41. (new) Biocompatible and biodegradable implant as in claim 14, wherein said granules are fused together by subjecting them within a mold to a heat treatment at a temperature in a range of about 70°C to about 220°C for at least about 10 seconds.

42. (new) Biocompatible and biodegradable implant as in claim 41, wherein the temperature is in the range of about 75°C to about 90°C.

43. (new) Biocompatible and biodegradable implant as in claim 41, wherein the granules are heat treated for a range of about 10 seconds to about 5 minutes.

44. (new) Method for forming a biocompatible and biodegradable implant for filling a cavity in a living organism, the method comprising:

positioning polymer-coated biocompatible and biodegradable granules within a mold, said granules being comprised of biocompatible and biodegradable materials which are selected from the group consisting of biopolymers, bioglasses or bioceramics or a mixture thereof and said granules being selected from solid granules, porous granules, hollow granules, hollow granules with at least one opening in the granule wall, or mixtures thereof, said granules having an equivalent-diameter in a range of about 350 μm to about 2000 μm; said granules being coated with a biocompatible and biodegradable layer of a polymer selected from the group consisting of poly(α-hydroxyesters), poly(ortho esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarate), poly(ester amides), poly(ethylene fumarate), polylactide, polyglycolide, polycaprolactone, poly(glycolide-co-trimethylene carbonate), polydioxanone, co-polymers thereof or a blend of those polymers and said polymer layer having a thickness in a range of about 2 μm to about 300 μm, corresponding to a weight fraction of about 4% to about 15% of the weight of the said implant; and

sterilizing and fusing together the granules within a mold through polymer linkage by subjecting the granules for a time range of at least about 3 seconds, to a pressurized CO_2 atmosphere, said CO_2 atmosphere having a pressure in a range of about 20 bar to about 200 bar, at a temperature in a range between about 20°C to about 37°C.

45. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, further comprising filling a cavity of a living organism with the implant, the cavity comprising an extraction wound or a bone tissue defect.

46. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the bioceramic is calcium sulfate or calcium phosphate.

47. (new) Method for forming a biocompatible and biodegradable implant as in claim 46, wherein the calcium phosphate is selected from the group consisting of monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phosphate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, apatite, hydroxyapatite, or a mixture thereof.

48. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the equivalent diameter of the granules is in the range of about 500 μm to about 1000 μm.

49. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the granules are of a regular shape.

50. (new) Method for forming a biocompatible and biodegradable implant as in claim 49, wherein the regular shape is a spherical shape.

51. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the polymer layer has a thickness in the range of about 5 μm to about 20 μm.

52. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the time range is about 15 seconds to about 180 seconds.

53. (new) Method for forming a biocompatible and biodegradable implant as in claim 44, wherein the pressure is about 50 bar.

54. (new) Method for forming a biocompatible and biodegradable implant for filling a cavity in a living organism, the method comprising:

selecting granules of biocompatible and biodegradable materials from polymer-coated and non-coated solid granules, porous granules, hollow granules, hollow granules with at least one opening in the granule wall, and mixtures thereof; and

sterilizing and fusing together the granules within a mold by subjecting the granules for at least about 10 seconds, to a heat treatment at a temperature range of about 70°C to about 220°C, said granules being composed of biocompatible and biodegradable materials which are selected from the group consisting of biopolymers, bioglasses, bioceramics or a mixture thereof, and said granules having an equivalent-diameter in a range of about 350 μm to about 2000 μm; said granules being coated with a biocompatible and biodegradable layer of a polymer selected from the group consisting of poly(α-hydroxyesters), poly(ortho esters), polyanhydrides, poly(phosphazenes), poly(propylene fumarate), poly(ester amides), poly(ethylene fumarate), polylactide, polyglycolide, polycaprolactone, poly(glycolide-co-trimethylene carbonate), polydioxanone, co-polymers thereof or a blend of those polymers and said polymer layer having a thickness in a range of about 2 μm to about 300 μm, corresponding to a weight fraction of about 4% to about 15% of the weight of the said implant.

55. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the cavity is an extraction wound or any bone tissue defect.

56. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the granules are subjected the to heat treatment for about 10 seconds to about 5 minutes.

57. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the temperature range is about 80°C to about 85°C.

58. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the bioceramic is calcium sulfate or calcium phosphate.

59. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the calcium phosphate is selected from the group consisting of monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phosphate, calcium orthophosphate phosphate, calcium pyrophosphate, α-tricalcium phosphate, β-tricalcium phosphate, apatite, hydroxyapatite, or a mixture thereof.

60. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the equivalent-diameter of the granules is in the range of about 500 μm to about 1000 μm.

61. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the granules are of a regular shape.

62. (new) Method for forming a biocompatible and biodegradable implant as in claim 61, wherein the regular shape is a spherical shape.

63. (new) Method for forming a biocompatible and biodegradable implant as in claim 54, wherein the polymer layer has a thickness in the range of about 5 μm to about 20 μm.